WW Engineering & Science
A Summit Company
5555 Glenwood Hills Parkway, SE• PO Box 874• Grand Rapids, MI 49588-0874
ARCS Program Management Office
U.S. EPA Contract No. 68-W8-0079

TRANSMITTAL FORM

Date: April 12, 1994

Attention: Ms. Laura Ripley
To: U.S. Environmental Protection Agency
77 West Jackson Blvd., HSRL-6J
Chicago, IL 60604

Project No.: 04015.23
Client: U.S. EPA
Project Name: Wisconsin Steel
Site Name:
Location: South Deering, IL

WE ARE SENDING YOU:

BY: _____ U.S. Mail _____ UPS __X__ Federal Express _____ Other: _____

ENCLOSED WITH THIS TRANSMITTAL: _____ *UNDER SEPARATE COVER:* _____

_____ Work Plan(s)	_____ Report(s) (DRAFT) (FINAL)	_____ Contract Documents
_____ Specifications	_____ Design Plans	_____ Change Order No.
_____ Shop Drawings	_____ Proposal(s)	__X__ Comments

QUANTITY	*DESCRIPTION / DOCUMENT NAME*
1	Comments on Technical Review of Statement of Work Phase II - Field Sampling Analysis
1	Diskette of same in Word Perfect 5.1.

THESE ARE TRANSMITTED AS CHECKED BELOW:

_____ For Approval	_____ For Your Information	__X__ For Your Use
_____ For File	_____ Furnished As Requested	_____ As Corrected
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REMARKS:

cc: 04015.23, 32

BY: Theodore A. Lietzke
Theodore A. Lietzke, Site Project Manager

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TECHNICAL REVIEW OF
STATEMENT OF WORK FOR PHASE II
FIELD SAMPLING AND ANALYSIS
Wisconsin Steel Works
South Deering, Illinois
April 1994

WW Engineering & Science (WWES) has prepared the following technical comments for the U.S. EPA, Region 5, concerning the February, 1994, draft document titled "STATEMENT OF WORK FOR PHASE II FIELD SAMPLING AND ANALYSIS," completed for the U.S. Department of Commerce (DOC) Economic Development Administration (EDA), as prepared by the U.S. Army Corps of Engineers (Corps), Buffalo District.

The above referenced "Sampling Plan" provides guidance for Phase II activities to be conducted in the summer of 1994 at the Wisconsin Steel Works (WSW) site. These activities are intended to supply additional information on contaminant levels and better delineate contaminant distribution on the site.

A technical meeting conducted with members of the Corps, the U.S. EPA, and the IEPA on December 8, 1993, included a discussion on the characterization of waste as hazardous or non-hazardous. The meeting also included discussion on appropriate protocols for analysis and disposal of these materials. The SOW does not address the issue of hazardous or special waste. The task of waste characterization may be planned by the Corps to be handled separately. However, the current SOW should acknowledge the issues of waste handling and analysis protocols.

The Sampling Plan includes investigation of several areas of concern, which were recommended by WWES. These areas of concern are:

- Stratigraphic investigation of geologic units beneath the Wadsworth Till via deep soil borings.

- Characterization of the Wadsworth Till as an aquitard via permeability tests of undisturbed soil samples.

- Investigation of contamination beneath the Wadsworth Till, including the installation of deep monitoring wells for sampling of ground water within the Lemont Till.

- Investigation of effluent water and sediments from the site's existing utility conduits.

- Investigation of light non-aqueous phase liquids (LNAPLs) via the installation of shallow water table monitoring wells.

Although the above areas of concern are included within the Corps' Sampling Plan, the following revisions or additional investigations are recommended by WWES for the upcoming Phase II field work:

- No discussion of previously-existing on-site water wells was included in the Sampling Plan. Field verification of previously-existing water wells on the WSW site is recommended. Additionally, supplemental information from on-site and off-site water well logs may be available via a records search and would greatly increase understanding of the site's potential off-site impact.

- A geophysical investigation should be considered to delineate the old North Slip as well as to determine the depth of the three slips' sheet pilings. Such an investigation could be incorporated into the upcoming field work.

- No soil borings or monitoring wells appear to have been placed in the vicinity of the steel "pickling" area (acid bath to strip steel prior to plating); the pickling area was approximately 500 feet northeast of the guard house on 106th Street. Has this possible caustic acid contamination been considered as an area of environmental concern? WWES recommends that this area be investigated during the upcoming field work.

- Although the Sampling Plan proposes that 7 new water table monitoring wells be completed on the site, previous WWES correspondence (January, 1994) has recommended that 12 new water table monitoring wells be installed. In particular, WWES recommended that three wells be placed in the Coke Plant area rather than one; one water table well should be placed adjacent to MW-16-B (unless existing

MW-16 can be documented as intersecting the Carmi Sand's water table); one water table well should be placed adjacent to MW-28 (unless existing MW-11 can be documented as intersecting the Carmi Sand's water table); and one water table well should be placed adjacent to SB-17 in the slag area.

- Although sampling of dense non-aqueous phase liquids (DNAPLs) has been proposed for the upcoming Phase II field work, no definitive plan has been presented within this Sampling Plan for DNAPL delineation. Such a pre-determined plan or approach is strongly recommended, especially for the Coke Plant area.

SECTION 2.0 TASK DESCRIPTIONS

TASK 1.0 - ADDITIONAL WELL INSTALLATIONS

Page 2-1, 1st Complete Paragraph

The SOW needs to more specifically identify screen placement for the deep monitoring wells which are currently listed as being "at the top of bedrock." If ground water is not observed on the "top of bedrock," then the deep wells should be set in the lowest perched zone below the Wadsworth Till. The borings for these wells should penetrate into bedrock to determine depth and condition of bedrock surface (lithology, fracture, etc.).

Page 2-1, 2nd Complete Paragraph

Although 10 deep monitoring wells are listed, only nine are identified on Table 2-1 and Figure 2-1. Although 8 water table monitoring wells are listed, only 7 are identified on Table 2-1 and Figure 2-1.

Page 2-1, 4th Complete Paragraph

By "in-place" well, do you mean an existing monitoring well?

Page 2-8, 1st Complete Paragraph

The Wadsworth Till is listed as possibly being sampled for contaminant concentrations; WWES recommends that units beneath this till aquitard be sampled, rather that the aquitard itself. WWES recommends that fill and sand samples be selected based on the **highest** visual or instrument indication of contamination.

Page 2-8, 2nd Complete Paragraph

WWES recommends that fill and sand samples be selected based on the **highest** visual or instrument indication of contamination.

Page 2-8, 3rd Complete Paragraph

WWES also recommends that a third Shelby Tube sample be collected for permeability tests from the Wadsworth Till (MW-31B) within the Coke Plant area.

TASK 2.0 - MONITORING WELL SAMPLING

Page 2-8, 5th Complete Paragraph

Although elevation measurements are listed within the Sampling Plan with a precision of 0.1 inch, WWES recommends that the precision be 0.01 feet. (Both units are similar, but the industry standard is 0.01 feet.)

Depending on the depth to ground water within the deep monitoring wells, hand-bailing of the wells may be a relatively difficult task. The Corps may wish to consider alternative sampling methods.

TASK 3.0 - HOT SPOT DEMARCATION AND SAMPLING

Page 2-11, 7th Complete Paragraph

A significant range of investigation methods is left open to the Contractor's discretion during the field work for the hot spot demarcation and sampling. However, none of the methods listed is described in sufficient detail to provide technical comments. Please provide such detail.

Page 2-11, 9th Complete Paragraph

QA/QC samples are necessary to validate data accuracy. If, however, the hot spot demarcation is considered a qualitative rather than quantitative investigation, then data validation may not be necessary. WWES recommends that standard QA/QC protocol be followed.

Page 2-11, Last Paragraph

Although the investigation of "hot spots" is designed to characterize contamination within the unsaturated zone above the Carmi Sand Aquifer and the aquifer, itself, the

Wadsworth Till must be partially penetrated to determine the existence of DNAPLs. Hence, borings may terminate in the till unit.

Page 2-19, Table 2-7

TPH and BTEX analysis should also be completed in the vicinity of the discarded tanks in the Slag Area.

TASK 4.0 - OPTIONAL BACKGROUND SAMPLING

Page 2-12, 3rd Complete Paragraph

Although Figure 2-4 is referenced as illustrating candidate locations for background sampling, the figure only includes a topographic map with no specifically-marked areas. Please propose specific locations.

TASK 5.0 - SAMPLING OF UTILITY CONDUITS

Page 2-12, 6th Complete Paragraph

Although Figure 2-5 illustrates the locations of storm basins, outfalls, and manholes, a 1928 Plat Map of the WSW water piping, sewers, etc., indicates that at least 4 and possibly 5 outfall locations may have been missed. Based on the Plat Map an outfall exists between A-10 and A-5 (the outfall was a previous "pump house" intake, so it may be submerged), another appears to exist north of A-11 (the outfall was another previous intake, so it may be submerged), two outfalls appear to exist south of A-11, and another may exist along the North Slip, directly north of the former "tar storage" tank within the coke plant area.

Page 2-12, 8th Complete Paragraph

The proposed tracer study may provide valuable information regarding the "short-cutting" effects of the utility conduits on ground water flow within the Carmi Sand. Will a copy of the tracer plan be available for agency technical review before implementation?

Page 2-21, Entire Page

The text of this page is identical to the bottom of page 2-12, except for the QA/QC requirements, which have been deleted. This page may be omitted from the Sampling Plan.

TASK 6.0 - DEEP CORE SAMPLING AND ANALYSIS

Page 2-26, 3rd Complete Paragraph

What sampling method will be used to collect river and slip sediment? Collecting representative samples can be difficult at times. We suggest that the Corps provide more guidance to the contractor on this task. If we can assist with the methodologies of sample collection, please let us know.

Page 2-26, 4th Complete Paragraph

Although OVA or HNU field screening is applicable to petroleum and other hydrocarbon-related contaminants, the majority of the contaminants anticipated in the river and slip sediments are metals, semi-volatile organic compounds (such as PAHs), and perhaps cyanide. Alternative field-screening methods should be investigated.

TASK 7.0 - ADDITIONAL TCLP TESTING

Page 2-26, 5th Complete Paragraph

Although 3 sample locations are indicated in the text of this paragraph, Figure 2-8 illustrates only 2 sampling locations. Please revise the figure. (The figure is very difficult to read at its present scale.)

How will the weathered and the unweathered slag be distinguished?

TASK 8.0 - PUMPING TESTS

Page 2-32, 1st Complete Paragraph

The first sentence is missing an object. "Two wells shall be constructed in..." what?

The pumping and observation wells proposed in this section (Task 8) should also be referenced in the Task 1 well installation section, as well as illustrated on Figure 2-1b.

Typically, an effective pump test requires the existence of a monitoring well within 5 to 10 feet of the pumping well, in addition to monitoring wells at greater distances (such as 50 feet)

Will the pumping wells be used as monitoring wells after the pump tests are completed? (The referenced ASTM guidance is designed for monitoring wells rather than standard recovery wells; so, we assume that the wells to be used for the pump tests will be standard monitoring wells.)

Page 2-35, 1st Complete Paragraph

Will all water pumped from the wells be containerized, sampled, analyzed, and disposed of properly? Will the storage drums or tanks also be properly labeled?

Page 2-35, Last Paragraph

The last line of this page (2-35) does not correspond with the first line of the next page (2-36).